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# CHAPTER 16

## **HAZARDOUS MATERIALS COMMUNICATION PROGRAM**

### **REQUIREMENTS FOR HANDLING HAZARDOUS MATERIALS**

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JULY 1996

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**HAZARDOUS MATERIALS COMMUNICATION PROGRAM**

**THIS SPACE AVAILABLE FOR NOTES:**

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# CHAPTER 16

## **HAZARDOUS MATERIALS COMMUNICATION PROGRAM**

### **REQUIREMENTS FOR HANDLING HAZARDOUS MATERIALS**

#### **16.00 INTRODUCTION**

This chapter discusses the training and information requirements if employees are using or handling hazardous materials in the workplace. It explains container labeling and other forms of warnings for hazardous materials, Material Safety Data Sheets (MSDS), and employee training requirements.

General Industry Safety Order, Section 5194 Hazard Communication, requires employers to have a written hazardous materials communication program if hazardous materials are present in the workplace.

#### NOTE:

A copy of this chapter shall be posted in each worksite where hazardous materials are used, and a copy should be made available, upon request, to interested employees, or their designated representative.

#### SPECIAL NOTE to Supervisors:

Making copies of this chapter available to interested persons is not a substitute for informing and training employees about hazardous materials, but is an additional action required by Cal-OSHA.

#### **16.01 PURPOSE**

The purpose of this chapter is to provide detailed information about hazardous material container labeling, inventory procedures, Material Safety Data Sheets (MSDS), training about hazardous materials, and industry-wide hazard warning labeling systems.

#### **16.02 POLICY STATEMENT**

Employees shall be provided information and training about the hazardous materials to which they may be exposed. Also, no hazardous materials will be delivered, stored, or used at any Caltrans worksite or facility unless they are properly labeled, tagged, or marked and the Material Safety Data Sheet (MSDS) is readily available.

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**16.03 PROGRAM RESPONSIBILITIES**

- Managers and supervisors are responsible to ensure that all elements of this program, including inventory listings, Material Safety Data Sheets (MSDS), labeling, and training are implemented and provided to all employees who are exposed, or can reasonably expect to be exposed, to hazardous materials.

**Notifying Caltrans personnel**

- Supervisors shall notify their employees of any hazardous materials they may be exposed to while working at a facility or project.
- Supervisors shall notify other employees working nearby of any hazardous materials that are in use and that they may be exposed to, and provide a MSDS if needed.
- Caltrans employees shall notify their supervisor of any new hazardous material that is brought on to the worksite, and that employees may encounter.

**Notifying non-Caltrans personnel**

- Resident engineer/contract administrator/supervisor who represents Caltrans interest at a project where hazardous materials are used or stored will notify non-Caltrans personnel of the hazardous materials, already at the worksite, that they may encounter.
- Resident engineer/contract administrator/supervisor shall notify non-Caltrans personnel of any new hazardous material that may be brought to the worksite by Caltrans or by others under Caltrans direction.

**Oversight and program support**

- Headquarters Office of Safety and Health is responsible for overseeing the Department's Hazardous Materials Communication Program, disseminating information, and providing direction to the District/Service Center managers and supervisors regarding hazardous materials. This includes providing information and assistance to supervisors in obtaining MSDS's, and assisting in providing the required training.

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- Headquarters Safety and Health Officer will administer and oversee the Hazardous Materials Communication Program for Sacramento area supervisors, the Administrative Service Center, and others not specifically assigned to local district offices or other service centers.
  - District Safety and Health Officers shall be responsible for administering and overseeing the Hazardous Materials Communication Program at the District level. This includes providing information and assistance to supervisors in obtaining Material Safety Data Sheets, and providing the required training.

#### **16.04 DEFINITIONS**

Hazardous Materials - any substance which is a physical or health hazard, or is included on the Cal-OSHA Director's List of Hazardous Substances, or is listed in Title 22 of the California Code of Regulations, Section 12000, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity (Proposition 65 Substances.)

Physical Hazard - a substance that is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric (ignites spontaneously in air at 130° F or less), unstable (reactive), or water reactive.

Health Hazard - a substance for which there is significant scientific evidence that acute or chronic health effects may occur in exposed employees. This includes carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

#### **16.05 EMPLOYEE'S RIGHT TO KNOW**

As part of Caltrans Hazard Communication Program employees have the right:

- To personally receive information about the hazardous materials to which they may be exposed.
- For their physician or collective bargaining agent to receive information about the hazardous substances to which the employee may be exposed.
- To not be discriminated against when exercising their "right to know" under the Hazardous Materials Communication Program.

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## 16.06 HAZARD WARNING AND LABELING SYSTEMS

To ensure that all users understand the health risks and hazards associated with various products, a “Hazard Warning and Labeling System” using words, pictures, symbols, or a combination will appear on a label or other form of marking on the container to convey the health hazards and physical hazards of the substance(s).

Two of the most common labeling systems are the National Fire Protection Association (NFPA 704), and the Hazardous Materials Identification System (HMIS)

These systems provide a numeric key to indicate the relative hazard of the material in the areas of Health, Flammability, and Reactivity. The number system is from “0” for non-hazards to “4” for extreme hazards.

The numbers are displayed on a color coded symbol or label: BLUE background for HEALTH hazard, RED background for FLAMMABILITY hazard, and YELLOW background for REACTIVITY hazard.

An additional WHITE color background is provided for SPECIAL hazardous properties of the material; i. e., oxidizer, poison, water reactive, etc.

The NFPA system arranges the colors in a “diamond” shape, starting with BLUE on the left corner, RED on the top, YELLOW on the right corner, and WHITE on the bottom.

The HMIS system stacks the colors vertically, with BLUE on the top, then RED, then YELLOW, and WHITE on the bottom. The HMIS system also provides a field for required personal protective equipment (PPE) to be used with the material.

Occasionally, NFPA hazards will be written horizontally, left to right as: NFPA-”A”-”B”-”C”-”D”, in this arrangement, health is the first, then flammability, reactivity, and special hazards.

Contact the Office of Safety and Health for additional information on rating systems.

The NFPA and HMIS systems of using words, pictures, symbols, or combinations are shown at the end of this chapter.

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**16.07 LABELING OF HAZARDOUS MATERIALS CONTAINERS**

All hazardous materials that are received for Caltrans use must be labeled, marked, or placarded in accordance with U. S. Department of Transportation regulations. The original label markings will be maintained in a clean and legible condition as long as the container could be re-shipped or transported to another location.

Supervisors are responsible to ensure that every container of hazardous materials is properly labeled, tagged, or marked to identify the contents, the appropriate hazard warnings, and the name and address of the manufacturer.

No container shall be used or stored with a damaged or defaced label. Supervisors and employees are responsible to replace damaged or defaced labels immediately.

Secondary containers; e.g., buckets, cans, pitchers, etc., must also be labeled, tagged, or marked to identify the hazardous contents, unless the contents are to be used in their entirety during the work shift.

**16.08 INVENTORIES**

Supervisors shall maintain an written inventory listing of all hazardous substances available in the workplace and shall make the list available to all employees. The list shall be updated annually, and whenever new products are introduced.

**16.09 NEW MATERIALS**

All new materials that contain hazardous materials shall not be used until employees have been trained in the proper use, handling, and disposal of the material, and their supervisor has reviewed the Material Safety Data Sheet (MSDS) covering the specific substance with them. Employees must also be trained in the hazards, protective equipment and symptoms of over exposure for the material.

New materials that have not been approved for use through the Department's "New Products Evaluation" process will not be used.

Contact Engineering Service Center, Materials Evaluation and Testing Services (formerly Translab) for additional information, or contact Headquarters or District Safety and Health Offices for assistance.

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**16.10 MATERIAL SAFETY DATA SHEETS (MSDS)**

Material Safety Data Sheet (MSDS) are prepared by manufacturer's and suppliers of products that contain hazardous materials. The MSDS is provided to the users of the product to ensure that they have the necessary information to use the product safely, and are fully informed of the associated risks and hazards.

Caltrans supervisors are required to maintain copies of MSDS's for the hazardous materials used at each workplace, in a printed format that is readily accessible to employees. MSDS documents shall also be available to designated representatives and the employee's physicians.

NOTE:

The State warehouse will provided MSDS's for hazardous materials supplied by them.

Material Safety Data Sheets include the following information:

- The chemical identity of the hazardous ingredients.
- The other ingredients if it is a mixture.
- The manufacturer's name, address, and telephone number.
- Physical and chemical properties of the substance.
- The hazardous reactivity, or how the chemical/product will react in a fire or explosion.
- Health hazard information, including emergency first aid procedures in the event of exposure, and progressive symptoms.
- Information regarding personal protective equipment required while using the product.
- Storage, spill, and waste disposal procedures.
- Directions for shipping and transporting.
- Whether the hazardous ingredients are classified carcinogens or potential carcinogens.
- Routes of entry into the body.

The supervisor will maintain a file of relevant MSDS's at the place where employees report to work, or at the workplace. Traveling crews shall carry the relevant MSDS's with them. MSDS files shall be kept current; new or updated MSDS's will be added immediately.

NOTE:

For Herbicides and Pesticides, the product label and the MSDS are required on the job site.



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**16.11 TRAINING**

All employees who work with hazardous materials shall be trained at the time of their initial assignment, and whenever a new hazardous material is introduced.

The required training consists of two (2) parts; general training provided by the Safety and Health Office or others, to provide information about the program labeling systems and MSDS's, and specific training provided by the supervisor on the particular dangers and characteristics of the hazardous materials that the employee will be exposed to. In particular:

**General training shall include:**

- Caltrans Hazardous Materials Communication Program;
- Material Safety Data Sheets (MSDS);
- labeling requirements;
- employee's rights;
- location and availability of this chapter;
- personal protection equipment (types and uses);
- detection of hazardous materials leaks and releases;
- proper storage and handling; and
- emergency spill, accident, and fire procedures.

The General training shall be renewed every two (2) years. Record this training on a standard Form 300, use G # 21820.

**Specific training shall include:**

- Material Safety Data Sheet (MSDS);
- labeling requirements;
- physical and health hazards;
- warning properties and symptoms of exposure;
- appropriate work practices;
- personal protective equipment necessary;
- emergency spill, accident, and fire procedures; and
- how the materials are used by Caltrans.

This category of training will be provided continuously so that employees are trained on all products they use. Record "specific" type training on a "tailgate" safety meeting report or equivalent form.

**Specific training for infrequent or non-routine tasks:**

Supervisors of employees performing infrequent or non-routine tasks which may involve exposure to hazardous materials shall hold a "tailgate safety meeting" to review the hazards before starting the work.

**Training records:** Supervisors shall maintain records for three (3) years to show that each employee has been trained regarding the hazardous materials they use or to which they are exposed.

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## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) SYSTEM

**HEALTH HAZARD—BLUE**

**4** Materials which on very short exposure could cause death or major residual injury even though prompt medical treatment were given.

**3** Materials which on short exposure could cause serious temporary or residual injury even though prompt medical treatment were given.

**2** Materials which on intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical treatment is given.

**1** Materials which on exposure would cause irritation but only minor residual injury even if no treatment is given.

**0** Materials which on exposure under fire conditions would offer no hazard beyond that of ordinary combustible material.

**FIRE HAZARD—RED**

**4** Materials which will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature, or which are readily dispersed in air and which will burn readily.

**3** Liquids and solids that can be ignited under almost all ambient temperature conditions.

**2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

**1** Materials that must be preheated before ignition can occur.

**0** Materials that will not burn.

heated under confinement before initiation or which react explosively with water.

**2** Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Also materials which may react violently with water or which may form potentially explosive mixtures with water.

**1** Materials which in themselves are normally stable, but which can become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently.

**0** Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

**REACTIVITY—YELLOW**

**4** Materials which in themselves are readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.

**3** Materials which in themselves are capable of detonation or explosive reaction but require a strong initiating source or which must be

**SPECIFIC HAZARD—WHITE**

Oxidizing Properties	Corrosive
Acid	Adverse Reaction with Water
Alkali	Radioactive

## HAZARD INDEX COLOR CODE:

FIRE HAZARD	=	RED BACKGROUND, BLACK LETTERS
HEALTH HAZARD	=	BLUE BACKGROUND, WHITE LETTERS
REACTIVITY	=	YELLOW BACKGROUND, BLACK LETTERS
SPECIFIC HAZARD	=	WHITE BACKGROUND, BLACK LETTERS

NOTE:

MAY ALSO BE WRITTEN:

<b>X</b>	<b>X</b>	<b>X</b>
HEALTH HAZARD	FIRE HAZARD	REACTIVITY

**“X” REPRESENTS HAZARD INDEX NUMBERS (4,3,2,1,0)**








































































































































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**HAZARDOUS MATERIALS COMMUNICATION PROGRAM**

**THIS SPACE AVAILABLE FOR NOTES:**

## HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

## HAZARD INDEX

Hazardous Materials Identification System																																																			
HMIS®																																																			
<b>HAZARD INDEX</b> <b>4 Severe Hazard</b> <b>3 Serious Hazard</b> <b>2 Moderate Hazard</b> <b>1 Slight Hazard</b> <b>0 Minimal Hazard</b>  <b>PRODUCT NAME</b>  <b>HEALTH</b> <input type="checkbox"/> <b>FLAMMABILITY</b> <input type="checkbox"/>  <b>REACTIVITY</b> <b>PERSONAL PROTECTION</b> <input type="checkbox"/>	<b>PERSONAL PROTECTION INDEX</b>  <table border="1"> <tbody> <tr> <td><b>A</b></td> <td></td> <td><b>H</b></td> <td> +  +  + </td> </tr> <tr> <td><b>B</b></td> <td> + </td> <td><b>I</b></td> <td> +  + </td> </tr> <tr> <td><b>C</b></td> <td> +  + </td> <td><b>J</b></td> <td> +  +  + </td> </tr> <tr> <td><b>D</b></td> <td> +  + </td> <td><b>K</b></td> <td> +  +  + </td> </tr> <tr> <td><b>E</b></td> <td> +  + </td> <td><b>X</b></td> <td>Ask your supervisor for specialized handling directions</td> </tr> <tr> <td><b>F</b></td> <td> +  +  + </td> <td></td> <td></td> </tr> <tr> <td><b>G</b></td> <td> +  + </td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <tbody> <tr> <td>Safety Glasses</td> <td>Face Shield</td> <td>Splash Goggles</td> <td>Airline Hood or Mask</td> <td>Gloves</td> <td>Synthetic Apron</td> <td>Dust Respirator</td> <td>Vapor Respirator</td> <td>Dust &amp; Vapor Respirator</td> <td>Full Suit</td> <td>Boots</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<b>A</b>		<b>H</b>	 +  +  + 	<b>B</b>	 + 	<b>I</b>	 +  + 	<b>C</b>	 +  + 	<b>J</b>	 +  +  + 	<b>D</b>	 +  + 	<b>K</b>	 +  +  + 	<b>E</b>	 +  + 	<b>X</b>	Ask your supervisor for specialized handling directions	<b>F</b>	 +  +  + 			<b>G</b>	 +  + 			Safety Glasses	Face Shield	Splash Goggles	Airline Hood or Mask	Gloves	Synthetic Apron	Dust Respirator	Vapor Respirator	Dust & Vapor Respirator	Full Suit	Boots											
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NOTE:

- HAZARD INDEX NUMBER: 4,3,2,1,or 0 must be written in box next to hazard index.
- HAZARD INDEX COLOR CODE:

HEALTH	=	BLUE BACKGROUND, WHITE LETTERS
FLAMMABILITY	=	RED BACKGROUND, WHITE LETTERS
REACTIVITY	=	YELLOW BACKGROUND, BLACK LETTERS
PERSONAL PROTECTION	=	WHITE BACKGROUND, BLACK LETTERS

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